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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,466

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EXAMINER

MAKI, STEVEN D

ART UNIT

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1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,466	Applicant(s) SHIBATA ET AL.	
	Examiner Steven D. Maki	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2008 and 17 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-13 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>111708</u> . | 6) <input type="checkbox"/> Other: _____ |

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1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11-17-08 and 12-17-09 has been entered.

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claims 10, 12, 13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10, there is no antecedent basis for "the whole fillers". In claim 10, it is suggested to change "the whole fillers" to --the total amount of filler--.

4) Applicant is advised that should claim 1 be found allowable, claim 7 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 1 and 7 have the same scope. Claim 7 describes the intended use of the tire instead of an additional limitation of the tire. In claim 7, it is suggested to change "a tire for a heavy load" to --a heavy load tire--.

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5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6) **Claims 1, 3-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 561 (EP 1179561) in view of Shiina (US 2002/0049294) and optionally Europe 613 (EP 738613).**

Europe 561 discloses a pneumatic tire having a composition comprising 100 parts rubber such as natural rubber or styrene-butadiene rubber (SBR), reinforcing filler such as **silica** and carbon black (e.g. HAF, ISAF and SAF), and 0.1-10 parts ester of (i) aliphatic polyvalent carboxylic acid or anhydride thereof (e.g. maleic anhydride) and (iii) (poly)oxyalkylene derivative. The ester is represented by the formula described at paragraphs 14-16. The slippage between rubber molecules is increased by using the ester as an additive in the rubber composition without degrading the properties of the cured rubber composition. The silica has a N2SA of 50-250 m²/g. Other additives such as processing oil may be included in the composition. At paragraph 55, Europe 561 describes using 100 parts natural rubber and 55 parts carbon black HAF. At paragraph 59, Europe 59 describes using 100 parts SBR, 30 parts carbon black ISAF and 30 parts silica. Europe 561 specifically discloses using the composition for a tire tread (paragraph 43). Parts (a), (b) and (c) of claim 1 do not appear to distinguish over Europe 561. In any event, it would have been obvious to one of ordinary skill in the art to provide Europe 561's tire such that the tread rubber

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comprises 100 parts rubber component comprising conjugated diene rubber, silica having a N2SA of 180-270 m²/g and 0.1-10 mass parts of a partial ester compound of maleic anhydride and a (poly)oxypropylene derivative since (1) Europe 561 teaches a pneumatic tire having a composition comprising 100 parts rubber such as natural rubber or styrene-butadiene rubber (SBR), 10-85 parts reinforcing filler such as silica having a N2SA of 50-250 m²/g or carbon black (e.g. HAF, ISAF and SAF), and 0.1-10 parts ester of (i) aliphatic polyvalent carboxylic acid or anhydride thereof such as the preferred maleic anhydride and (iii) (poly)oxyalkylene derivative (paragraphs 14-16) so that the slippage between rubber molecules is increased by using the ester as an additive in the rubber composition without degrading the properties of the cured rubber composition, (2) Europe 561 teaches using the rubber composition for the tread of the tire and optionally (3) Europe 613 suggest using a rubber composition comprising 40 to 80 part filler of silica and carbon black comprised of 5-60 parts silica in a cap tread of truck tire so that heat generation is reduced. Europe 561 does not recite using hydrazide compound in the tread rubber composition.

As to claim 1, it would have been obvious to one of ordinary skill in the art to use the claimed hydrazide compound in the tread rubber composition of Europe 561's tire since Shiina teaches using hydrazide compound in the tire tread to suppress the decrease in modulus due to reversion under over-cure and deterioration in the low heat generating property and abrasion resistance (paragraphs 48-165, especially paragraphs 65, 164 and 165). Both Europe 561 and Shiina teach incorporating silica in the tire tread. Shiina motivates one of ordinary skill in the art to use the claimed hydrazide in

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Europe 561's silica reinforced tire tread to obtain the expected and predicted benefit of suppressing decrease in modulus due to reversion under over-cure and deterioration in low heat generating property and abrasion resistance. No unexpected results over Europe 561 have been shown.

As to claim 3, Shiina teaches the specific hydrazide compound (paragraph 65).

As to claim 4, note Europe 561's teaching to use natural rubber.

As to claim 5, Europe 561 teaches using 10-85 parts filler wherein the filler may be carbon black such as HAF, ISAF and SAF. It is taken as well known that HAF, ISAF and SAF correspond to N330, N220 and N110 respectively. It is also taken as well known that each of N330, N220 and N330 have a N2SA falling in the claimed range of 30-160 and a DBP falling within the claimed range of 60-150.

As to claim 6, Europe 561 teaches using 10-85 parts filler such as silica.

As to claims 7 and 8, Europe 561 teaches using the composition for a tread of a tire and either Shiina or Europe 613 teach providing a tire as a truck tire ("heavy load tire" / "off-road tire").

As to claim 9, it would have been obvious to use Europe 561's composition in the cap of a tire tread since Europe 613 suggests using a cap base construction for a truck tire (heavy duty tire). It is taken as well known in the tread art that a tread cap provides desired traction and the tread base provides desired rolling resistance.

As to claim 11, see paragraphs 14-16 of Europe 561.

7) Claims 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 561 (EP 1179561) in view of at least one of Japan 748

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(JP 09-208748) and Hayashi et al (US 3,927,144) and optionally further in view of Europe 613 (738613).

Europe 561 discloses a pneumatic tire having a composition comprising 100 parts rubber such as natural rubber or styrene-butadiene rubber (SBR), reinforcing filler such as **silica** and carbon black (e.g. HAF, ISAF and SAF), and 0.1-10 parts ester of (i) aliphatic polyvalent carboxylic acid or anhydride thereof (e.g. maleic anhydride) and (iii) (poly)oxyalkylene derivative. The ester is represented by the formula described at paragraphs 14-16. The slippage between rubber molecules is increased by using the ester as an additive in the rubber composition without degrading the properties of the cured rubber composition. The silica has a N2SA of 50-250 m²/g. Other additives such as processing oil may be included in the composition. At paragraph 55, Europe 561 describes using 100 parts natural rubber and 55 parts carbon black HAF. At paragraph 59, Europe 59 describes using 100 parts SBR, 30 parts carbon black ISAF and 30 parts silica. Europe 561 specifically discloses using the composition for a tire tread (paragraph 43). Parts (a), (b) and (c) of claim 1 do not appear to distinguish over Europe 561. In claim 1, "10 mass % or more silica" reads on 100% silica. In any event, it would have been obvious to one of ordinary skill in the art to provide Europe 561's tire such that the tread rubber comprises 100 parts rubber component comprising conjugated diene rubber, filler comprising silica having a N2SA of 180-270 m²/g wherein the amount of silica is at least 10% by weight filler and 0.1-10 mass parts of a partial ester compound of maleic anhydride and a (poly)oxypropylene derivative since (1) Europe 561 teaches a pneumatic tire having a composition

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comprising 100 parts rubber such as natural rubber or styrene-butadiene rubber (SBR), 10-85 parts reinforcing filler such as silica having a N2SA of 50-250 m²/g or carbon black (e.g. HAF, ISAF and SAF), and 0.1-10 parts ester of (i) aliphatic polyvalent carboxylic acid or anhydride thereof such as the preferred maleic anhydride and (iii) (poly)oxyalkylene derivative (paragraphs 14-16) so that the slippage between rubber molecules is increased by using the ester as an additive in the rubber composition without degrading the properties of the cured rubber composition, (2) Europe 561 teaches using the rubber composition for the tread of the tire and optionally (3) Europe 613 suggest using a rubber composition comprising 40 to 80 part filler of silica and carbon black comprised of 5-60 parts silica in a cap tread of truck tire so that heat generation is reduced. Europe 561 does not recite using hydrazide compound in the tread rubber composition. Europe 561 does not recite using petroleum base resin in the tread wherein the petroleum resin has a softening point of 30-150 degrees C.

As to claim 10, it would have been obvious to one of ordinary skill in the art to include the claimed petroleum base resin in Europe 561's rubber composition for the tire tread of a tire in view of (1) Europe 561's teaching that other additives may be included in the rubber composition and (2) (a) Japan 748's teaching to improve grip on a wet road of a tire by using 3-50 parts petroleum resin having a softening point of 60-150 degrees C in the rubber composition of the tread (abstract, machine translation) and/or (b) Hayashi et al's suggestion to use a petroleum resin having a softening point of 80-150 degrees C in a rubber composition for a tread of a large truck tire to improve cut resistance. Both Europe 561 and Japan 748 teach incorporating "additives" in the tire

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tread. Japan 748 motivates one of ordinary skill in the art to use the claimed additive (petroleum resin) in Europe 561's tire tread to obtain the expected and predicted benefit of improving grip of the tire on a wet road. Both Europe 561 and Hayashi teach incorporating "additives" in the tire tread. Hayashi et al motivates one of ordinary skill in the art to use the claimed additive (petroleum resin) in Europe 561's tire tread to obtain the expected and predicted benefit of improving cut resistance of the tire tread. No unexpected results over Europe 561 have been shown.

As to claim 12, Europe 561 teaches using SBR.

As to claim 13, Europe 561 teaches using 10-85 parts filler and the optional Europe 613 teaches using 40-80 parts filler.

8) Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 561 (EP 1179561) in view of at least one of Japan 748 (JP 09-208748) and Hayashi et al (US 3,927,144) and optionally further in view of Europe 613 (738613) as applied above and further in view of Sohnen et al (US 2002/0045697).

As to claim 15, it would have been obvious to one of ordinary skill in the art to include the claimed softening agent in Europe 561's rubber composition since (1) Europe 561 teaches that other additives such as processing oil (softening agent) may be included in the rubber composition for the tire tread and (2) Sohnen et al suggests using 5-60 parts mineral oil softener with PAC < 3% determined with DMSO according to IP 346 method in a composition for a tire tread (entire tread or cap and base tread) to improve processability and improve grip on wet roads while causing no environmental / health concerns.

Remarks

9) Applicant's arguments filed 11-17-08 and 12-17-08 have been fully considered but they are not persuasive.

The 132 declaration by Mamiya filed 12-17-08 has been considered but is not persuasive of nonobviousness.

The 132 declaration by Nakamura filed 12-17-08 has been considered but is not persuasive of nonobviousness.

With respect to claim 1, applicant's arguments regarding unexpected results are not commensurate in scope with the claims and are therefore not persuasive. With respect to claim 1 and the results in the 132 declaration by Mamiya, the results are for a composition containing 100 parts natural rubber and 10 parts silica and 40 parts carbon black whereas claim 1 fails to require 100 parts natural rubber and 10 parts silica and 40 parts carbon black. The 132 declaration by Mamiya does not show, for example, obtaining improved heat build up when using either (a) 85 parts silica and 0 parts carbon black (as suggested by Europe 561) or (b) 60 parts silica and 20 parts carbon black (as suggested by Europe 613). Claim 1 is not limited to using any specific amount of filler. This is significant because silica reinforced rubber reduces heat build up as evidenced by Europe 613 (page 2 lines 40-44).

With respect to claim 10, applicant's arguments regarding unexpected results are not commensurate in scope with the claims and are therefore not persuasive. With respect to claim 10 and the results in the 132 declaration by Nakamura, the results are for a composition containing 137.5 parts SBR and 45 parts carbon black and 45 parts

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silica and 10 parts aluminum hydroxide whereas claim 10 fails to require 137.5 parts SBR and 45 parts carbon black and 45 parts silica and 10 parts aluminum hydroxide.

The 132 declaration by Nakamura does not show, for example, obtaining improved driving stability and wet gripping property when using either (a) 85 parts silica and 0 parts carbon black (as suggested by Europe 561) or (b) 60 parts silica and 20 parts carbon black (as suggested by Europe 613). Claim 1 is not limited to using any specific amount of filler. This is significant because amount and type of filler is known to affect wet grip and reinforcement as evidenced by Japan 748 (paragraph 15).

10) No claim is allowed.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven D. Maki/
Primary Examiner, Art Unit 1791

Steven D. Maki
June 6, 2009